

## **ADDENDUM**

### **HOSPITAL HEALTH INFORMATION TECHNOLOGY (HIT) INVENTORY**

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This addendum to the SHIP Grant Program Annual Report for FY 2005 is an inventory of proposed use of funds for health information technology (HIT) gathered from the FY 2005 and FY 2004 hospital application narratives submitted to SORH for funding. It is compiled as a means to begin to understand the current status of HIT use in approximately 1,600 small rural hospitals participating in the SHIP grant program.

For the purposes of this report, the term HIT is used as a descriptor of the electronic infrastructure for information storage and exchange to coinciding with the term information communications technology (ICT) used in the 2005 Institute of Medicine report *Quality Through Collaboration: The Future of Rural Health*.

#### **DATA AND METHODS**

Data was abstracted from the 1,591 completed FY 2005 and 1,523 completed FY 2004 hospital grant application forms that asked for “unmet needs” and “use of funds” in the three SHIP categories of PPS, HIPAA and QI. These questions were open-ended and did not ask specifically whether funds would be used to purchase HIT. The information that hospitals offered was categorized by technology use and further summarized to provide an overview of HIT purchases with SHIP grant funds. Hospitals fund multiple projects with SHIP grant funds; therefore, some of the data included in this overview is duplicative.

The following categories were defined for data abstraction from hospital applications:

- HIT infrastructure (hardware, software, licensing, communications)
- Infrastructure for HIPAA
- Infrastructure for QI
- Business office (coding, billing, accounting applications)
- Ancillary services (lab and radiology only)
- Health Information Management (physician and/or nurse order entry, electronic health records, clinical notes, storage and archiving of records)
- Quality improvement (clinical QI initiative applications)
- Pharmacy information technology
- Telehealth/telemedicine
- Online education
- Data benchmarking

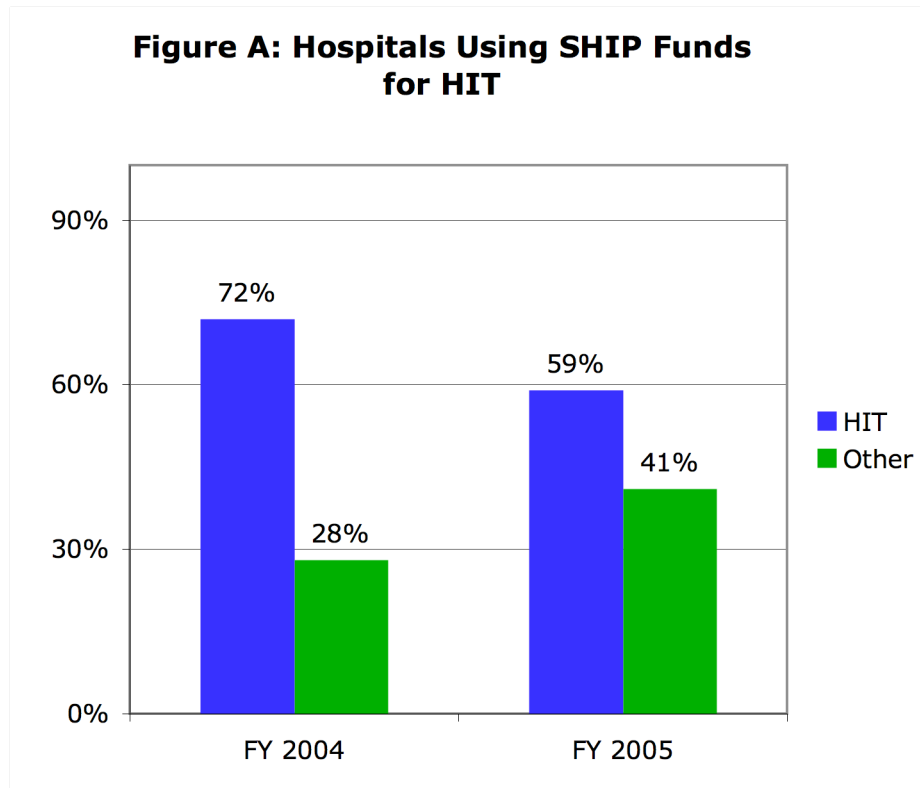
For the purposes of this inventory, data was collapsed into the following categories:

- ICT infrastructure
- HIPAA
- QI
  - Clinical applications
- Business office applications

## RESULTS

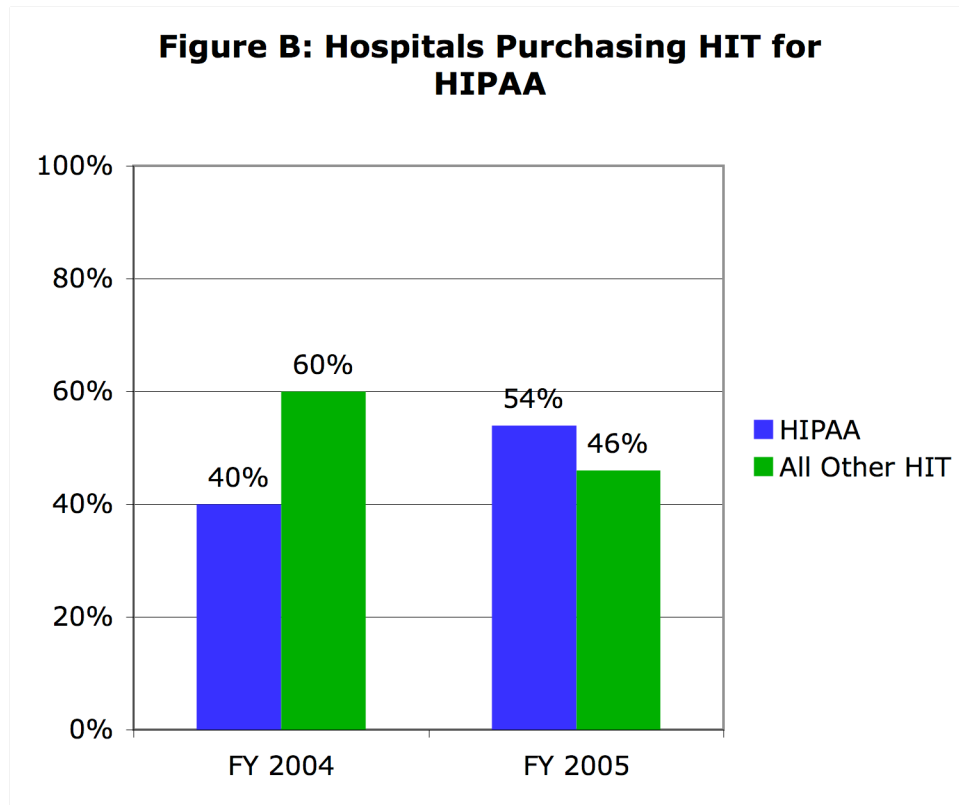
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In an overview of the hospital use of SHIP funds for HIT purchases, fewer hospitals reported HIT purchases in FY 2005 than in FY 2004 (figure A). Comparatively, more hospitals listed HIT purchases for HIPAA activities in FY 2005 than 2004, fewer hospitals listed HIT purchases for QI in FY 2005 than FY 2004, and the number of hospitals listing business office HIT purchases remained relatively constant in both years.



### HIPAA

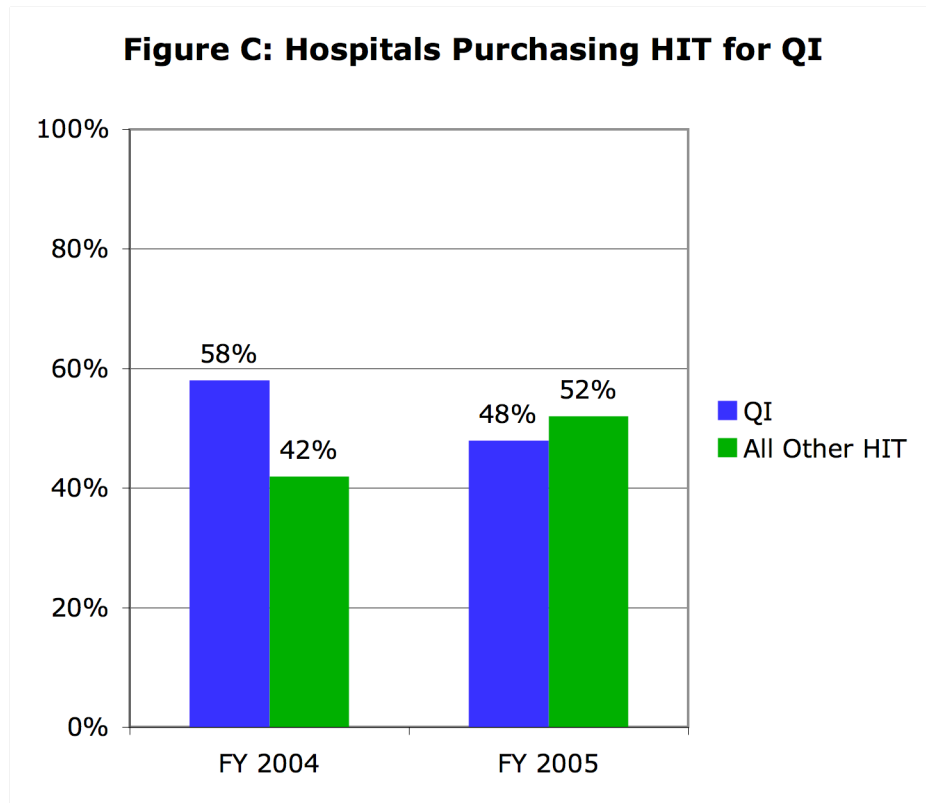
Of the three categories for which SHIP funds can be spent, HIPAA compliance was the most frequently cited for HIT purchases in FY 2005 with 35 percent more hospitals listing HIT purchases for HIPAA compliance than in FY 2004 (figure B). This may be partially attributable to the April 2005 deadline for compliance with the HIPAA security rule and the need for computers and software powerful enough to support the necessary firewalls and encryption capabilities.



#### QUALITY IMPROVEMENT AND REDUCTION OF MEDICAL ERRORS

The QI category is the most often cited for the overall use of SHIP grant funds by participating hospitals. Seventeen percent fewer hospitals listed HIT purchases for Quality Improvement purposes as a use of SHIP funds in FY 2005 than in FY 2004 (figure C). Nearly 200 hospitals listed general HIT infrastructure purchases in the QI category that spanned all areas of the hospital and might better be characterized as performance improvement. For the purposes of this inventory, HIT initiatives for non-business office QI were separated from infrastructure-type projects. The information for FY 2004 and FY 2005 HIT QI expenditures reflects only those medical-side QI expenditures that encompass the following categories:

- Pharmacy IT
- Clinical quality improvement
- Health information management (order entry, chart notes, records archiving)
- Benchmarking databases
- Online education for staff and patients
- Ancillary services (radiology and laboratory)
- Telehealth



#### CLINICAL QUALITY IMPROVEMENT

Specific clinical quality improvement initiatives account for approximately 26 percent of expenditures within the QI category each year. Fewer hospitals used SHIP funds for clinical quality improvement HIT initiatives in FY 2005 than FY 2004. Proportionately, pharmacy IT and clinical QI projects were still the most frequently listed. The largest change was in more hospitals using SHIP HIT funds for online education in FY 2005 than in FY 2004. Examples of clinical HIT applications include:

- Software for tracking and reporting data associated with utilization review, quality assurance, performance improvement, quality improvement, risk management, infection control and chart auditing.
- Statistical software for occurrence and performance reporting; root cause, process verification, performance patterns, and trend analysis.
- Software and connectivity for compliance and accreditation
- Physician profiling and credentialing software

#### PHARMACY INFORMATION TECHNOLOGY

The most frequently cited clinical QI initiative for both years was pharmacy information technology. In FY 2004 41 percent of these QI investments were in pharmacy information technology, dropping to 31 percent in FY 2005. Examples of pharmacy IT include:

- Medication dispensing systems
- Bar coding and hand-held scanning devices

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- Automated medication administration records (MAR) and pharmacy labeling systems
- Remote pharmacist access
- Medication error databases
- Medication verification systems
- PDAs and software for prescribing and drug reference
- Pharmacy computer hardware and software systems
- Modules to link pharmacy with hospital information systems

HEALTH INFORMATION MANAGEMENT (HIM)

HIT-type applications for the management of health information range from a full electronic health record (EHR) to point-of-care order entry to equipment for digital storage of patient records. Many of the hospitals purchased self-contained systems for the Emergency Department that include charting, tracking, prescribing, discharge instructions, reporting and coding capabilities.

Some examples of these applications include:

- Physician and nurse order entry
- Electronic Health Record implementation
- Computerized medical record tracking systems, including bar code systems
- Bedside charting systems, wireless mobile computer consoles or carts, laptops for home health care chart notes
- Voice recognition software for dictation
- Remote access to patient information
- Archiving and digitizing patient records for storage

BENCHMARKING DATA

For the purposes of quality improvement, it is notable that about 45 hospitals each year invested their SHIP funds to participate or subscribe to existing network, state, regional or national benchmarking databases.

ONLINE EDUCATION

Nearly twice as many hospitals in FY 2005 (57) as FY 2004 (31) used a portion of their SHIP grant funds to set up or purchase online modules for local or distance employee and patient education in the areas of quality improvement, HIPAA compliance and coding or billing updates.

ANCILLARY SERVICES

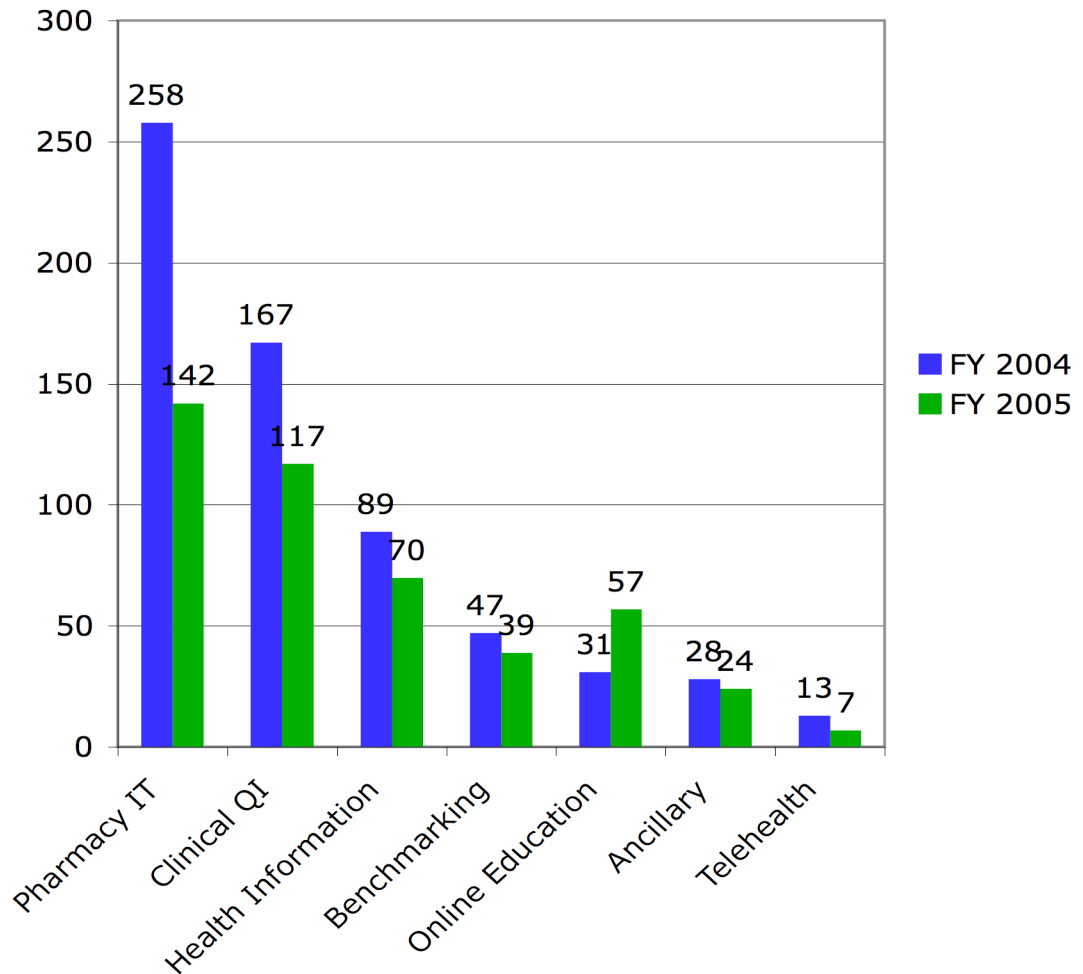
Fewer than 30 hospitals each year invested SHIP grant funds in computerized lab or radiology information systems. In addition to the improved reporting and recording of patient results enabled by these systems, digitized imaging was cited as necessary for access to radiologists.

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TELE-HEALTH

Approximately one percent of the HIT hospitals reported using SHIP grant funds for tele-health each year. Most of these hospitals invested in tele-radiology applications.

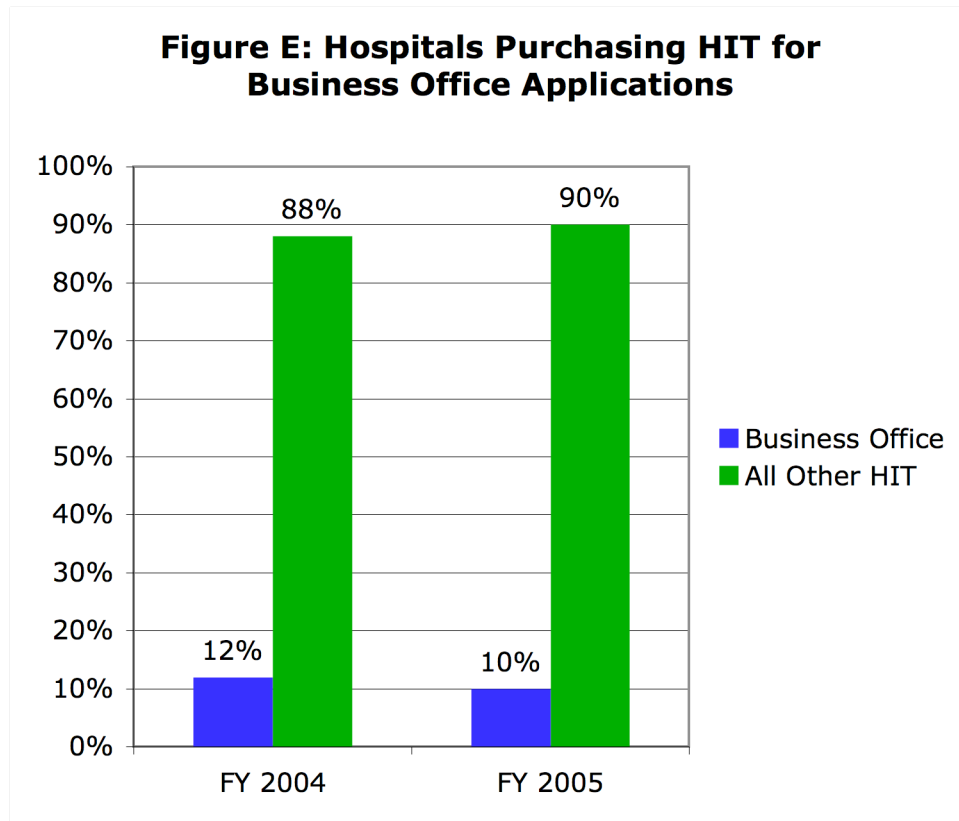
**Figure D: Hospitals Purchasing HIT For Clinical QI**



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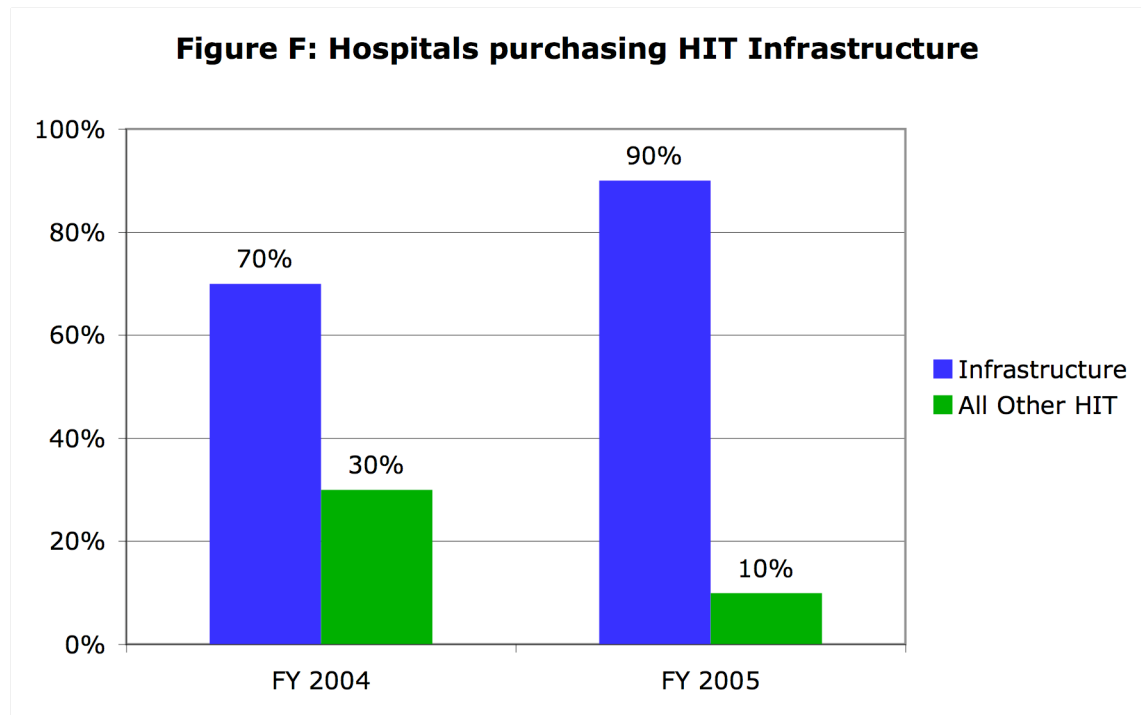
BUSINESS OFFICE

Each year, approximately 10 percent of the HIT hospitals use a portion of their funds for business office applications such as coding, billing or accounting software (figure E).



#### INFRASTRUCTURE

Most of the hospitals that used SHIP grant funds for HIT initiatives purchased or upgraded hardware and software infrastructure – information technology that serves as the foundation for business office, HIPAA privacy and security and quality improvement functions. More hospitals listed HIT infrastructure-type purchases in FY 2005 than in FY 2004 (figure F).



Examples of computer infrastructure purchases include:

- Upgrading operating systems to a version that complies with HIPAA privacy and security standards
- New servers, desktop computers or software with firewalls and encryption capabilities
- Additional PCs, laptops and printers to increase staff and provider access to data

Examples of communications technology infrastructure purchases include:

- T1 lines and high speed Internet access, wireless networking
- Digital dictation and transcription equipment
- New electronic (encrypted, barcode or biometric) identification systems for patients and staff